

COPY

HUGHES

COMBINED DECLARATION FOR PATENT APPLICATION
AND POWER OF ATTORNEY

Page 1 of 2
PD-970227

- ☒ Original
☐ Continuation
☐ Division
☐ Continuation-in-part
☐ Supplemental

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

MULTI-SPOT-BEAM SATELLITE SYSTEM WITH BROADCAST AND SURGE CAPACITY CAPABILITY

the specification of which

(check one) ☒ is attached hereto.
☐ was filed on _____ as Application Serial No. _____ and (a) [other than supplemental] was amended on _____ or (b) [supplemental] with amendments through _____

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

<u>NONE</u>	_____	_____	Priority Claimed
Number	Country	Day/Month/Year Filed	<input type="checkbox"/> Yes <input type="checkbox"/> No

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code §112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

_____	_____	_____
Application Serial No.	Filing Date	Status
		(patented, pending, abandoned)

COPY


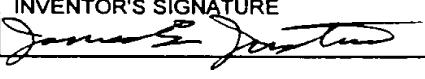

I hereby appoint the following attorneys, or agent and attorneys, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

Terje Gudmestad, Registration No. 32,232,
Elizabeth E. Leitereg, Registration No. 34,101,
Wanda K. Denson-Low, Registration No. 32,215.

Address all telephone calls to TERJE GUDMESTAD, (310) 568-6088.

Address all correspondence to Patent Docket Administration, Hughes Electronics, Bldg. CO1/A126, P.O. Box 80028, Los Angeles, California 90080-0028.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such false statements may jeopardize the validity of the application or any patent issued thereon.

FULL NAME OF SOLE OR JOINT INVENTOR Jamal Sarraf	INVENTOR'S SIGNATURE 	DATE 6/24/97
RESIDENCE (CITY AND STATE) Irvine, California		CITIZENSHIP United States
POST OFFICE ADDRESS 7 Fulton, Irvine, California 92620		
FULL NAME OF SOLE OR JOINT INVENTOR Edward J. Fitzpatrick	INVENTOR'S SIGNATURE	DATE
RESIDENCE (CITY AND STATE) Rancho Palos Verdes, California		CITIZENSHIP United States
POST OFFICE ADDRESS 6813 Kings Harbor Drive, Rancho Palos Verdes, California 90275		
FULL NAME OF SOLE OR JOINT INVENTOR James E. Justiss	INVENTOR'S SIGNATURE 	DATE 6/24/97
RESIDENCE (CITY AND STATE) Rancho Palos Verdes, California		CITIZENSHIP United States
POST OFFICE ADDRESS 26739 Basswood Avenue, Rancho Palos Verdes, California 90275		
FULL NAME OF SOLE OR JOINT INVENTOR Remberto Martin	INVENTOR'S SIGNATURE 	DATE 6/24/97
RESIDENCE (CITY AND STATE) Walnut, California		CITIZENSHIP United States
POST OFFICE ADDRESS 870 Margaret Lane, Walnut, California 91789		
FULL NAME OF SOLE OR JOINT INVENTOR Michelle J. Glaser-Weiner	INVENTOR'S SIGNATURE	DATE
RESIDENCE (CITY AND STATE)		CITIZENSHIP United States
POST OFFICE ADDRESS		

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☐ Continuation
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☐ Supplemental

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My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

MULTI-SPOT-BEAM SATELLITE SYSTEM WITH BROADCAST AND SURGE CAPACITY CAPABILITY

the specification of which

(check one) ☒ is attached hereto.
☐ was filed on _____ as Application Serial No. _____ and (a) [other than supplemental] was amended on _____ or (b) [supplemental] with amendments through _____

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

<u>NONE</u>	_____	_____	Priority Claimed
Number	Country	Day/Month/Year Filed	<input type="checkbox"/> Yes <input type="checkbox"/> No

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Application Serial No.

Filing Date

Status
(patented, pending, abandoned)

COPY

I hereby appoint the following attorneys, or agent and attorneys, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

Terje Gudmestad,	Registration No. 32,232,
Elizabeth E. Leitereg,	Registration No. 34,101,
Wanda K. Denson-Low,	Registration No. 32,215.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such false statements may jeopardize the validity of the application or any patent issued thereon.

FULL NAME OF SOLE OR JOINT INVENTOR Jamal Sarraf	INVENTOR'S SIGNATURE	DATE
RESIDENCE (CITY AND STATE) Irvine, California	CITIZENSHIP United States	
POST OFFICE ADDRESS 7 Fulton, Irvine, California 92620		
FULL NAME OF SOLE OR JOINT INVENTOR Edward J. Fitzpatrick	INVENTOR'S SIGNATURE <i>Edward J. Fitzpatrick</i>	DATE 6/24/97
RESIDENCE (CITY AND STATE) Rancho Palos Verdes, California	CITIZENSHIP United States	
POST OFFICE ADDRESS 6813 Kings Harbor Drive, Rancho Palos Verdes, California 90275		
FULL NAME OF SOLE OR JOINT INVENTOR James E. Justiss	INVENTOR'S SIGNATURE	DATE
RESIDENCE (CITY AND STATE) Rancho Palos Verdes, California	CITIZENSHIP United States	
POST OFFICE ADDRESS 26739 Basswood Avenue, Rancho Palos Verdes, California 90275		
FULL NAME OF SOLE OR JOINT INVENTOR Remberto Martin	INVENTOR'S SIGNATURE	DATE
RESIDENCE (CITY AND STATE) Walnut, California	CITIZENSHIP United States	
POST OFFICE ADDRESS 870 Margaret Lane, Walnut, California 91789		
FULL NAME OF SOLE OR JOINT INVENTOR Michelle J. Glaser-Weiner	INVENTOR'S SIGNATURE <i>Michelle J. Glaser-Weiner</i>	DATE 6/24/97
RESIDENCE (CITY AND STATE) <i>Manhattan Beach, California</i>	CITIZENSHIP United States	
POST OFFICE ADDRESS <i>1756 Ninth Street, Manhattan Beach, California 90266</i>		

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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Jamal Sarraf et al.

Application No./Patent No.: 09/605,775 Filed/Issue Date: June 28, 2000

Entitled: MULTI-SPOT-BEAM SATELLITE SYSTEM WITH BROADCAST AND SURGE CAPACITY CAPABILITY

Hughes Electronics Corporation, a Corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest; or
2. ☐ an assignee of less than the entire right, title and interest.
The extent (by, percentage) of its ownership interest is _____ %

in the patent application/patent identified above by virtue of either:

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

OR

- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as shown below:

1. From: Jamal Sarraf, Edward J. Fitzpatrick, James E. Justiss, Remberto Martin and Michele J. Glaser-Weiner To: HE Holdings, Inc., dba Hughes Electronics

The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: HE Holdings, Inc. dba Hughes Electronics To: Hughes Electronics Corporation

The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.

- ☒ Copies of assignments or other documents in the chain of title are attached.
[NOTE: A separate copy (i.e., the original assignment document or a true copy of the original document) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the USPTO. See MPEP 302.08]

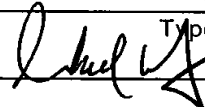
The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

April 29, 2003

Date

Michael W. Sales

Typed or printed name



Signature

Assistant Secretary

Title

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

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UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
ASSISTANT SECRETARY AND COMMISSIONER
OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

MARCH 13, 1998

PTAS

HUGHES ELECTRONICS CORPORATION
ELIZABETH E. LEITEREG
200 N. SEPULVEDA BLVD.
P.O. BOX 956
EL SEGUNDO, CA 90245

RECEIVED

MAR 26 1998

PATENTS & LICENSING
CORPORATE OFFICE

UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, NORTH TOWER BUILDING, SUITE 10C35, WASHINGTON, D.C. 20231.

RECORDATION DATE: 02/17/1998

REEL/FRAME: 8921/0153
NUMBER OF PAGES: 37

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:

HE HOLDINGS INC., DBA HUGHES
ELECTRONICS, FORMERLY KNOWN AS HUGHES AIRCRAFT COMPANY

DOC DATE: 12/16/1997

ASSIGNEE:

HUGHES ELECTRONICS CORPORATION
200 N. SEPULVEDA BLVD.
P.O. BOX 956
EL SEGUNDO, CALIFORNIA 90245

SERIAL NUMBER: 08695015
PATENT NUMBER:

FILING DATE: 08/09/1996
ISSUE DATE:

SERIAL NUMBER: 03426957
PATENT NUMBER:

FILING DATE:
ISSUE DATE:

SERIAL NUMBER: 03420536
PATENT NUMBER:

FILING DATE:
ISSUE DATE:

SERIAL NUMBER: 03526210
PATENT NUMBER:

FILING DATE:
ISSUE DATE:

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8921/0153 PAGE 27

SERIAL NUMBER: 08876278
PATENT NUMBER:

FILING DATE: 06/16/1997
ISSUE DATE:

SERIAL NUMBER: 08867197
PATENT NUMBER:

FILING DATE: 06/02/1997
ISSUE DATE:

SERIAL NUMBER: 08867672
PATENT NUMBER:

FILING DATE: 06/02/1997
ISSUE DATE:

SERIAL NUMBER: 08928886
PATENT NUMBER:

FILING DATE: 09/12/1997
ISSUE DATE:

SERIAL NUMBER: 08888485
PATENT NUMBER:

FILING DATE: 07/07/1997
ISSUE DATE:

SERIAL NUMBER: 08869843
PATENT NUMBER:

FILING DATE: 06/05/1997
ISSUE DATE:

SERIAL NUMBER: 08882119
PATENT NUMBER:

FILING DATE: 06/25/1997
ISSUE DATE:

SERIAL NUMBER: 08949634
PATENT NUMBER:

FILING DATE: 10/14/1997
ISSUE DATE:

SERIAL NUMBER: 60050884
PATENT NUMBER:

FILING DATE: 06/26/1997
ISSUE DATE:

SERIAL NUMBER: 60052443
PATENT NUMBER:

FILING DATE: 07/14/1997
ISSUE DATE:

SERIAL NUMBER: 08947070
PATENT NUMBER:

FILING DATE: 10/08/1997
ISSUE DATE:

SERIAL NUMBER: 60057594
PATENT NUMBER:

FILING DATE: 08/29/1997
ISSUE DATE:

SERIAL NUMBER: 60057368
PATENT NUMBER:

FILING DATE: 08/29/1997
ISSUE DATE:

SERIAL NUMBER: 60057593
PATENT NUMBER:

FILING DATE: 08/29/1997
ISSUE DATE:

SERIAL NUMBER: 60052574
PATENT NUMBER:

FILING DATE: 07/15/1997
ISSUE DATE:

SERIAL NUMBER: 60059474
PATENT NUMBER:

FILING DATE: 09/22/1997
ISSUE DATE:

SERIAL NUMBER: 06061437
PATENT NUMBER:

FILING DATE:
ISSUE DATE:

SERIAL NUMBER: 90001307
PATENT NUMBER:

FILING DATE: 08/17/1987
ISSUE DATE: 05/03/1988

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Patent
PD-970227

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

SARRAFI, J.

Serial No. 08882119

Filed: Jun 25 1997

For: MULTI-SPOT-BEAM SATELLITE SYSTEM WITH
BROADCAST AND SURGE CAPACITY
CAPABILITY

Date: February 11, 1998

Group Art Unit: 2611

Examiner:

NOTICE OF NAME CHANGE AND APPOINTMENT OF ASSOCIATES

Honorable Assistant Commissioner of Patents
Washington, D.C. 20231

Dear Sir:

Please be advised that the above-identified patent application has now been assigned by the assignee of record to Hughes Electronics Corporation. A document evidencing this assignment is being concurrently submitted with a recordation sheet (under separate cover) for recordation (see Enclosure 1). In view of the foregoing, please change the address for all future correspondence to the following:

Hughes Electronics Corporation
Attn: Patent Docket Administration
Bldg. 001 M/S A109
P.O. Box 956
200 N. Sepulveda Blvd.
El Segundo, CA 90245-0956

Pursuant to our name change, please be advised that the undersigned attorneys, have been duly appointed to represent the present assignee Hughes Electronics Corporation (see Encl. 2), with full power to prosecute said application and to transact all business in the United States Patent and Trademark Office connected therewith.

<u>Name</u>	<u>Reg. No.</u>	<u>Name</u>	<u>Reg. No.</u>
John A. Crook	30,830	Elizabeth E. Leitereg	34,101
Wanda K. Denson-Low	32,215	Phyllis Y. Price	34,234
Vijayalakshmi D. Duraiswamy	31,505	Michael W. Sales	30,213
Georgann S. Grunebach	33,179	John T. Whelan	32,448
Terje Gudmestad	32,232		

Respectfully submitted,
SARRAFI, J.

By:

Attorney for Applicants

Registration No. 30213

HUGHES ELECTRONICS CORPORATION
Bldg. 001, M.S. A109
200 N. Sepulveda Blvd.
P.O. Box 956
El Segundo, CA 90245-0956
PHONE: (310)

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner of Patents, Washington, D.C. 20231, on February 11, 1998

Michael W. Sales
(Name of Applicant, Assignee
or Registered Representative)

(Signature)

(Date of Signature)

COPY

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ASSIGNMENT OF PATENTS
AND
RELATED INTELLECTUAL PROPERTY RIGHTS
FROM
HE HOLDINGS, INC. dba HUGHES ELECTRONICS
TO
HUGHES ELECTRONICS CORPORATION

This Assignment is effective the 15th day of December, 1997.

WHEREAS, HE Holdings, Inc., dba Hughes Electronics and formerly known as Hughes Aircraft Company (see Exhibit A), a corporation of the State of Delaware, United States of America ("Assignor"), having a principal place of business in Los Angeles, California, is the owner of the rights, title and interests in and to the invention disclosures, patent applications and United States patents, listed on Schedule A attached hereto; and

WHEREAS, Hughes Electronics Corporation, a corporation organized and existing under the laws of the State of Delaware, United States ("Assignee"), having a principal place of business at Los Angeles, California, in connection with a corporate reorganization involving Assignor and referred to as "Triple Play", is desirous of acquiring title and any existing rights which Assignor has or may have in the invention disclosures, patent applications, and issued patents which are a) listed on Schedule A or b) which originated in any business units of Assignee listed on Exhibit B during the period when such business units were or are business units of Assignor or which are owned by such business units, (all such invention disclosures, patent applications, and patents herein collectively referred to as "the Patents"), and any applications for patent, letters patent, reissues, reexaminations, divisions, parents, continuations, continuations-in-part, or extensions thereof which may have been or shall be granted thereon in the United States, and any foreign country throughout the world, as well as title and any existing rights to all trade secrets, copyrights, license agreements and other intellectual property rights relating to the technology described in the Patents ("Related Intellectual Property Rights");

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NOW, THEREFORE, to whom it may concern, be it known that pursuant to the obligations herein and good and valuable consideration, the sufficiency and receipt of which is hereby acknowledged, Assignor hereby assigns and transfers to Assignee all right, title and interest that it has and may have in said Patents and the inventions claimed therein, and the Related Intellectual Property Rights, to be held and enjoyed by the Assignee, its successors and assigns, as fully and as entirely as the same would have been held and enjoyed by Assignor had this assignment not been made, together with all present or future claims for profits, royalties, fees and/or damages by reason of past infringement or use of the Patents or Related Intellectual Property Rights by any party or parties, with the right to sue for and collect the same as Assignee sees fit.

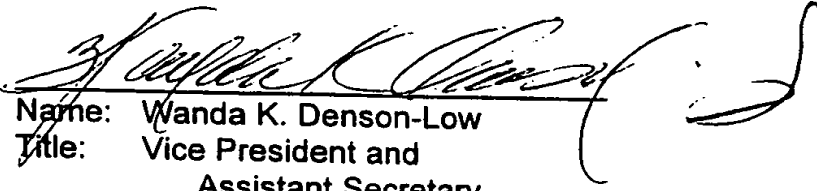
Assignor, for itself and its assigns, successors in interest and legal representatives does hereby: authorize and request the Commissioner of Patents and Trademarks of the United States and all foreign countries to issue all letters patents to Assignee, its successors, assigns or other legal representatives for the Patents; covenant that no assignment, sale, agreement, transfer or encumbrance will be made or entered into which would conflict with this Assignment; agree to communicate to Assignee its successors, assigns or other legal representatives, upon request, any facts known to Assignor respecting the Patents and Related Intellectual Property Rights; appoint Assignee its attorney in fact with respect to all matters, including claims and proceedings, relating to the Patents and Related Intellectual Property Rights; agree to do all lawful acts, including the execution and delivery of all papers and proper oaths and giving of testimony that are deemed necessary or desirable by Assignee, its successors, assigns or representatives for protecting, obtaining, maintaining and enforcing any and all of said Patents and the Related Intellectual Property Rights in the United States and throughout the world and for perfecting, affirming, recording and maintaining the title in Assignee, its successors, assigns or other legal representatives, and generally cooperate to the fullest extent in all matters pertaining to the Patents and the Related Intellectual Property Rights.

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ASSIGNOR:
HE HOLDINGS, INC., dba Hughes Electronics

By:


Name: Wanda K. Denson-Low
Title: Vice President and
Assistant Secretary

STATE OF California)
COUNTY OF Los Angeles)

SS:

On December 16, 1997 before
me, T. MONTGOMERY

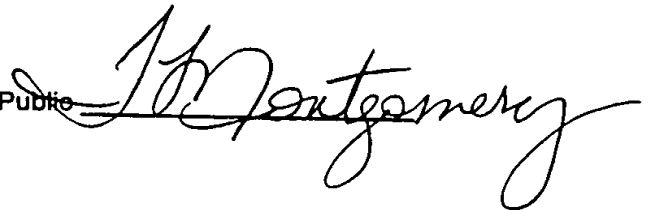
a Notary Public in and for said State, personally appeared

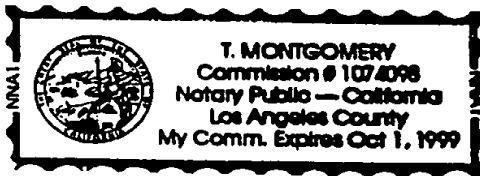
Wanda K. Denson-Low

☒ personally known to me or ☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Notary Public





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EXHIBIT A

PAGE 1

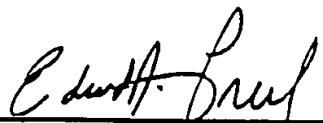
State of Delaware

Office of the Secretary of State

I, EDWARD J. FREEL, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "HUGHES AIRCRAFT COMPANY", CHANGING ITS NAME FROM "HUGHES AIRCRAFT COMPANY" TO "HE HOLDINGS, INC.", FILED IN THIS OFFICE ON THE SECOND DAY OF JANUARY, A.D. 1996, AT 9 O'CLOCK A.M.

A CERTIFIED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS FOR RECORDING.




Edward J. Freel, Secretary of State

0472015 8100

AUTHENTICATION:

7774686

960000711

DATE:

01-02-96

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**CERTIFICATE OF AMENDMENT
OF
CERTIFICATE OF INCORPORATION
OF
HUGHES AIRCRAFT COMPANY**

Hughes Aircraft Company, a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, does hereby certify:

FIRST: That the sole stockholder of the Corporation did consent to and adopt the following resolution setting forth a proposed amendment to the Certificate of Incorporation of the Corporation:


RESOLVED, That Article 1 of the Certificate of Incorporation of this corporation is hereby amended to read as follows:

"1. The name of the corporation is HE Holdings, Inc."


SECOND: That this amendment was duly adopted in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware.

IN WITNESS WHEREOF, said corporation has caused this certificate to be signed by its Chairman of the Board and attested by its Secretary this 8th day of December, 1995.

HUGHES AIRCRAFT COMPANY

By: 
M. T. Smith
Chairman of the Board

Attest:

By: 
R. M. Hall
Secretary

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**SCHEDULE A
OF
ASSIGNMENT OF PATENTS AND RELATED INTELLECTUAL
PROPERTY RIGHTS
FROM
HE HOLDINGS, INC. dba HUGHES ELECTRONICS
TO
HUGHES ELECTRONICS CORPORATION**

PATENT APPLICATIONS

PD NO.	FILING DATE	SERIAL NO.	TITLE
✓ 970124	8/28/97	08/924,450	STOWAGE PROFILE COUPLING MECHANISM FOR TE(011) AND TE(01Q) MODE RESONATORS
✓ 970125	7/7/97	08/888,487	MESH TENSIONING, RETENSION AND MANAGEMENT SYSTEMS FOR LARGE DEPLOYABLE REFLECTORS
✓ 970146	6/05/97	08/869,840	FLAT INTERFACE HELIX AND ROD ASSEMBLY
✓ 970148	6/05/97	08/869,841	OPTIMALLY DESIGNED TRAVELING WAVE TUBE FOR OPERATION BACKED OFF FROM SATURATION
✓ 970149	6/05/97	08/869,842	EFFICIENT, HIGHLY LINEAR TRAVELING WAVE TUBE USING COLLECTOR WITH HIGH BACKSTREAMING CURRENT UNDER SATURATED DRIVE
✓ 970166	4/21/97	60/044,753	NOVEL BURST FORMAT AND ASSOCIATED SIGNAL PROCESSING TO IMPROVE FREQUENCY-TIMING
✓ 970174	6/16/97	08/876,278	COORDINATABLE SYSTEM OF INCLINED GEOSYNCHRONOUS SATELLITE ORBITS
✓ 970175	6/2/97	08/867,197	METHOD AND SYSTEM FOR PROVIDING WIDEBAND COMMUNICATIONS TO MOBILE USERS IN A SATELLITE- BASED NETWORK
✓ 970176	6/2/97	08/867,672	METHOD AND SYSTEM FOR COMMUNICATING HIGH RATE DATA IN A SATELLITE-BASED COMMUNICATIONS NETWORK
✓ 970178	9/12/97	08/928,886	METHOD AND SYSTEM FOR PROVIDING GLOBAL VARIABLE DATA RATE CONNECTIVITY IN A SATELLITE- BASED COMMUNICATIONS NETWORK
✓ 970182	7/7/97	08/888,485	HIGH-TORQUE APPARATUS AND METHOD USING COMPOSITE MATERIALS FOR DEPLOYMENT OF A MULTI- RIB UMBRELLA-TYPE REFLECTOR
✓ 970191	6/05/97	08/869,843	HIGH EFFICIENCY COLLECTOR FOR TRAVELING WAVE TUBES WITH HIGH PERVEANCE BEAMS
✓ 970227	6/25/97	08/882,119	MULTI-SPOT-BEAM SATELLITE SYSTEM WITH <u>BROADCAST AND SURGE CAPACITY CAPABILITY</u>
✓ 970243	10/14/97	08/949,634	THREE-AXIS INERTIAL ATTITUDE DETERMINATION FOR SPINNING SPACECRAFT
✓ 970308	6/26/97	60/050,884	THIRD GENERATION MOBILE COMMUNICATION SYSTEMS
✓ 970319	7/14/97	60/052,443	SIGNALING MAINTENANCE FOR DISCONTINUOUS INFORMATION COMMUNICATIONS
✓ 970325	10/8/97	08/947,070	BATCH OPTIMIZED METHOD FOR TRANSFER ORBIT RECONSTRUCTION
✓ 970326	8/29/97	60/057,594	ROCKET ENGINE HAVING A TRANSITION ATTACHMENT BETWEEN A COMBUSTION CHAMBER AND AN INJECTOR
✓ 970327	8/29/97	60/057,368	FABRICATION OF A ROCKET ENGINE WITH A TRANSITION STRUCTURE BETWEEN THE COMBUSTION CHAMBER

COPY

WHOLLY OWNED SUBSIDIARIES, AFFILIATES, PARTNERSHIPS, INVESTMENTS (See Legend Below)

HUGHES ELECTRONICS CORPORATION
Hughes Network Systems (a business unit)

dated as of 11/4/97

DIRECTV ENTERPRISES, INC.

- DIRECTV, Inc.
- DIRECTV Merchandising, Inc.
- DIRECTV Operations, Inc.

HUGHES TELECOMMUNICATIONS & SPACE COMPANY

- Hughes do Brasil - Eletronica e Comunicacoes Ltda.
- Hughes International de Mexico, S.A. de C.V.
- Hughes Space and Communications Company
- Hughes Space and Communications International Service Company
- Hughes Global Services, Inc.
- Hughes Space and Commun. International, Inc.
- PT. Pasifik Satellite Nusantara (a)
- Spectrolab, Inc.
- Hughes Communications, Inc.
- DIRECTV International, Inc.
- California Broadcast Center LLC
- DTVI One, Inc.
- DTVI Two, Inc.
- DIRECTV Japan Kabushiki Kaisha(a)
- DIRECTV Latin America, Inc.
- Galaxy Entertainment de Venezuela, C.A. (a)
- Galaxy Latin America (p)
- Servicos Galaxy Sat III R, C.S. (a)
- Hughes Electronics Japan Kabushiki Kaisha
- Hughes Japan Broadcasting KK
- Kabushiki Kaisha DIRECTV
- SurFin, Ltd. (a)
- Hughes Communications Galaxy, Inc.
- Hughes Communications Satellite Services, Inc.
- American Mobile Satellite Corporation (a)
- PanAmSat Corporation (a)
- ICO Global Communications (Holdings) Ltd (l)
- Lifestar Digital Television, Inc. (p)
- Medical Science Partners III (p)
- Technologies for Info. & Entertainment III, L.P. (p)

HUGHES NETWORK SYSTEMS

- First HNS Mauritius Ltd
- Hughes Ispat Limited (a)
- HNS-Clairtel GP, Inc.
- HNS-India, Inc.
- HNS-India VSAT, Inc.
- HNS-Italia S.r.L.
- HNS-Shanghai, Inc.
- Hughes Electronics Foreign Sales Corporation
- Hughes Electronics International Corporation
- Hughes Electronics Systems International
- Hughes Escorts Communications Limited (a)
- Hughes-Kenwood RDSS Inc. (a)
- Hughes Network Systems France
- Hughes Network Systems International Service Company
- Hughes Network Systems Limited
- Hughes Olivetti Telekom GmbH
- Hughes Olivetti Telecom, N.V.
- Hughes Olivetti Telecom, Ltd. (a)
- Hughes Software Systems Private Ltd
- NetSat Express, Inc.
- Shanghai Hughes Network Systems (a)
- Verinet (p)
- Hughes International de Mexico, S.A. de C.V. - OWNED BY AND REPORTS TO HTS
- HNS de Mexico, S.A. de C.V.
- Satelitron S.A. de CV (a)

OTHER SUBSIDIARIES

- First Portland Technology Corp.(l)
- FLIR Systems, Inc. (a)
- Hughes Aircraft Holdings Canada Ltd.
- Hughes-Avicom International, Inc.
- Hughes Electronics Manufacturing Company
- Avicom International S.A.
- Hughes Electronics Realty, Inc.
- Hughes Foreign Sales Corporation
- Hughes International Sales Corporation
- Hughes International Sales Corporation No. 2
- Hughes Investment Management Company
- Hughes Research Laboratories LLC (50% - a)
- Hughes Research Analytics, Inc.
- Hughes-Pareto Research Partnership (p)
- L-T Ranches, Inc.
- MDP, Ltd.
- XMC Holdings, Ltd.
- Nippon Avionics Co., Ltd (a)

S:\CORP\UNPLAY\BORG48.DOC

LEGEND

- (a) Affiliate (less than wholly owned)
- (p) Joint Venture Partnerships
- (l) Investment (no direct management involvement & less than 10% ownership)

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

GENERAL APPOINTMENT OF ATTORNEYS

Assistant Commissioner of Patents and Trademarks
Washington, D.C. 20231

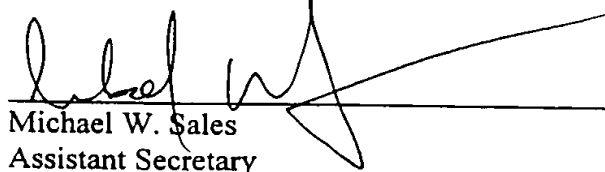
Sir

The undersigned, HUGHES ELECTRONICS CORPORATION, a corporation incorporated in the State of Delaware, United States of America, hereby appoints the following attorneys as its principal attorneys, whose addresses are 200 N. Sepulveda Blvd., P.O. Box 956, Bldg. 001, M.S. A109, El Segundo, California 90245-0956, United States of America, to act on its behalf in connection with any and all matters before the U.S. Patent and Trademark Office, including applications filed by or assigned to it or of which it is the applicant, and to transact all necessary matters on its behalf in connection therewith, with full powers of substitution and revocation.

<u>Name</u>	<u>Reg. No.</u>	<u>Name</u>	<u>Reg. No.</u>
John A. Crook	30,830	Elizabeth E. Leitereg	34,101
Wanda K. Denson-Low	32,215	Phyllis Y. Price	34,234
Vijayalakshmi D. Duraiswamy	31,505	Michael W. Sales	30,213
Georgann S. Grunebach	33,179	John T. Whelan	32,448
Terje Gudmestad	32,232		

Place: Los Angeles, California, United States of America
Date: February 10, 1998

HUGHES ELECTRONICS CORPORATION


Michael W. Sales
Assistant Secretary

HUGHES ELECTRONICS CORPORATION
Bldg. 001, M.S. A109
200 N. Sepulveda Blvd.
P.O. Box 956
El Segundo, California 90245-0956
United States of America

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FORM PTO-1595
(Rev. 8-93)
OMB No. 0651-0011 (exp. 4/94)

RECORDATION FORM COVER SHEET PATENTS ONLY

U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office
PD-970227

To the Honorable Assistant Commissioner for Patents: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

J. SARRAF, E. J. FITZPATRICK, J. E.
JUSTISS, R. L. MARTIN, M. J. GLASER-WEINER

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of conveyance:

- ☒ Assignment ☐ Merger
☐ Security Agreement ☐ Change of Name
☐ Other _____

Execution Date: June 24, 1997

2. Name and address of receiving party(ies)

Name: HUGHES ELECTRONICS

Internal Address:

Bldg. C01, M/S A126
P. O. Box 80028
Los Angeles, CA 90080-0028

Street Address:

7200 Hughes Terrace
Bldg. C01, M/S A126
City: Los Angeles State: CA ZIP: 90045

Additional name(s) & address(es) attached? ☐ Yes ☒ No

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: June 24, 1997

A. Patent Application No.(s)

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Patent Docket Administration
Hughes Electronics

Internal Address:

Bldg. C01, M/S A126
P. O. Box 80028
Los Angeles, CA 90080-0028

Street Address:

7200 Hughes Terrace
Bldg. C01, M/S A126

City: Los Angeles State: CA ZIP: 90045

6. Total number of applications and patents involved:

1

7. Total fee (37 CFR 3.41).....\$ 40.00

- ☐ Enclosed
☒ Authorized to be charged to deposit account

8. Deposit account number:

08-3250

(Attach duplicate copy of this page if paying by deposit account)

DO NOT USE THIS SPACE

9. Statement and signature

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Name of Person Signing

T. GUDMESTAD

Signature

June 25, 1997

Date

Total number of pages including cover sheet, attachments, and document: 7

Mail documents to be recorded with required cover sheet information to:
Assistant Commissioner for Patents, Box Assignments
Washington, D.C. 20231

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HUGHES

ASSIGNMENT

Page 1 of 3
PD-970227

WHEREAS, I, as below named sole inventor (if only one name is listed below) or joint inventor (if plural names are listed below) of the city and state as stated below next to my name, have invented a (an), **MULTI-SPORT-BEAM SATELLITE SYSTEM WITH BROADCAST AND SURGE CAPACITY CAPABILITY** for which application for Letters Patent of the United States has been executed by me on this day, or (if the following is completed) filed on _____ as Serial No. _____; and

WHEREAS, HE Holdings, Inc., doing business as Hughes Electronics, (hereinafter referred to as HUGHES ELECTRONICS), a Delaware Corporation, having its principal place of business in Los Angeles, California, is desirous of acquiring the entire and exclusive right, title and interest in, to and under said invention, said application and any and all Letters Patent that may be granted therefor in the United States and throughout the world;

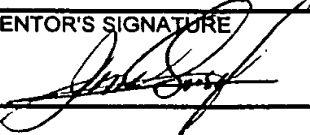
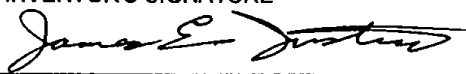
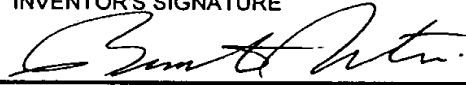
NOW, THEREFORE, in consideration of the obligations voluntarily assumed by me and set forth in an invention agreement between me and my employer, effective the date as stated below next to my name, and other good and valuable consideration, receipt of which is hereby acknowledged, I do hereby sell, assign and transfer to HUGHES ELECTRONICS, its successors, assigns or other legal representatives, the entire and exclusive right, title and interest in and to said invention invented by me, to said application and any and all applications which are continuations, continuations-in-part, divisions or substitutes of said application and any and all Letters Patent that may be granted therefor in the United States and throughout the world on any of said applications and to any and all reexaminations, reissues, renewals or extensions of said Letters Patent in the United States and throughout the world for the full term or terms for which said Letters patent may be granted in the United States and throughout the world; authorize and request The Commissioner of Patents and Trademarks of the United States and all foreign countries to issue all such Letters Patent to said HUGHES ELECTRONICS, its successors, assigns or other legal representatives; covenant that no assignment, sale, agreement, transfer or encumbrance has been, or will be, made or entered into which would conflict with this assignment, sale and transfer; and agree to communicate to HUGHES ELECTRONICS, its successors, assigns or other legal representatives, upon request and at no cost or expense to me, any facts known by me respecting said invention, do all lawful acts, including the execution and delivery of all papers and proper oaths and giving of testimony that is deemed necessary or desirable by HUGHES ELECTRONICS, its successors, assigns or other legal representatives with regard to said invention for protecting, obtaining, maintaining and enforcing any and all of said Letters Patent in the United States and throughout the world for said invention and for perfecting, affirming, recording and maintaining the title of HUGHES ELECTRONICS, its successors, assigns or other legal representatives, and generally cooperate to the fullest extent in all matters pertaining to said invention, and any and all of said Letters Patent and the title thereto in HUGHES ELECTRONICS, its successors, assigns or other legal representatives.

COPY

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ASSIGNMENT
Page 2 of 3
PD-970227

IN WITNESS WHEREOF, I have executed this instrument.

FULL NAME OF SOLE OR JOINT INVENTOR Jamal Sarraf	INVENTOR'S SIGNATURE 	DATE 6/24/97
RESIDENCE (CITY AND STATE) Irvine, California		INVENTION AGREEMENT DATE 07/26/82
FULL NAME OF SOLE OR JOINT INVENTOR Edward J. Fitzpatrick	INVENTOR'S SIGNATURE	DATE
RESIDENCE (CITY AND STATE) Rancho Palos Verdes, California		INVENTION AGREEMENT DATE 03/25/80
FULL NAME OF SOLE OR JOINT INVENTOR James E. Justiss	INVENTOR'S SIGNATURE 	DATE 6/24/97
RESIDENCE (CITY AND STATE) Rancho Palos Verdes, California		INVENTION AGREEMENT DATE 07/13/73
FULL NAME OF SOLE OR JOINT INVENTOR Remberto Martin	INVENTOR'S SIGNATURE 	DATE 6/24/97
RESIDENCE (CITY AND STATE) Walnut, California		INVENTION AGREEMENT DATE 12/11/95
FULL NAME OF SOLE OR JOINT INVENTOR Michelle J. Glaser-Weiner	INVENTOR'S SIGNATURE	DATE
RESIDENCE (CITY AND STATE)		INVENTION AGREEMENT DATE

STATE OF California)
COUNTY OF Los Angeles)

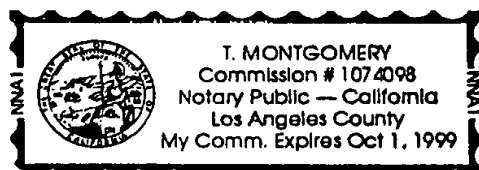
SS:

On June 24, 1997 before me, T. MONTGOMERY,


a Notary Public in and for said State, personally appeared JAMAL SARRAF, JAMES E. JUSTISS
and REMBERTO MARTIN*****

~~Personally known to me and~~ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.



Notary Public



COPY

COPY

ASSIGNMENT
Addendum
Page 3 of 3
PD-

STATE OF _____)
COUNTY OF _____)

SS:

On _____ before me, _____
a Notary Public in and for said State, personally appeared _____

☐ personally known to me or ☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Notary Public _____

STATE OF _____)
COUNTY OF _____)

SS:

On _____ before me, _____
a Notary Public in and for said State, personally appeared _____

☐ personally known to me or ☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Notary Public _____

COPY

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HUGHES

ASSIGNMENT

Page 1 of 3
PD-970227

WHEREAS, I, as below named sole inventor (if only one name is listed below) or joint inventor (if plural names are listed below) of the city and state as stated below next to my name, have invented a (an), **MULTI-SPORT-BEAM SATELLITE SYSTEM WITH BROADCAST AND SURGE CAPACITY CAPABILITY** for which application for Letters Patent of the United States has been executed by me on this day, or (if the following is completed) filed on _____ as Serial No. _____; and

WHEREAS, HE Holdings, Inc., doing business as Hughes Electronics, (hereinafter referred to as HUGHES ELECTRONICS), a Delaware Corporation, having its principal place of business in Los Angeles, California, is desirous of acquiring the entire and exclusive right, title and interest in, to and under said invention, said application and any and all Letters Patent that may be granted therefor in the United States and throughout the world;

NOW, THEREFORE, in consideration of the obligations voluntarily assumed by me and set forth in an invention agreement between me and my employer, effective the date as stated below next to my name, and other good and valuable consideration, receipt of which is hereby acknowledged, I do hereby sell, assign and transfer to HUGHES ELECTRONICS, its successors, assigns or other legal representatives, the entire and exclusive right, title and interest in and to said invention invented by me, to said application and any and all applications which are continuations, continuations-in-part, divisions or substitutes of said application and any and all Letters Patent that may be granted therefor in the United States and throughout the world on any of said applications and to any and all reexaminations, reissues, renewals or extensions of said Letters Patent in the United States and throughout the world for the full term or terms for which said Letters patent may be granted in the United States and throughout the world; authorize and request The Commissioner of Patents and Trademarks of the United States and all foreign countries to issue all such Letters Patent to said HUGHES ELECTRONICS, its successors, assigns or other legal representatives; covenant that no assignment, sale, agreement, transfer or encumbrance has been, or will be, made or entered into which would conflict with this assignment, sale and transfer; and agree to communicate to HUGHES ELECTRONICS, its successors, assigns or other legal representatives, upon request and at no cost or expense to me, any facts known by me respecting said invention, do all lawful acts, including the execution and delivery of all papers and proper oaths and giving of testimony that is deemed necessary or desirable by HUGHES ELECTRONICS, its successors, assigns or other legal representatives with regard to said invention for protecting, obtaining, maintaining and enforcing any and all of said Letters Patent in the United States and throughout the world for said invention and for perfecting, affirming, recording and maintaining the title of HUGHES ELECTRONICS, its successors, assigns or other legal representatives, and generally cooperate to the fullest extent in all matters pertaining to said invention, and any and all of said Letters Patent and the title thereto in HUGHES ELECTRONICS, its successors, assigns or other legal representatives.

COPY

COPY

ASSIGNMENT
Page 2 of 3
PD-970227

IN WITNESS WHEREOF, I have executed this instrument.

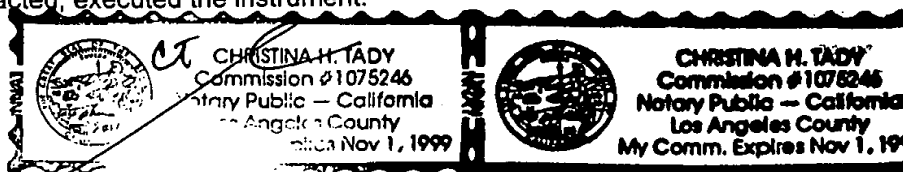
FULL NAME OF SOLE OR JOINT INVENTOR Jamal Sarraf	INVENTOR'S SIGNATURE	DATE
RESIDENCE (CITY AND STATE) Irvine, California		INVENTION AGREEMENT DATE 07/26/82
FULL NAME OF SOLE OR JOINT INVENTOR Edward J. Fitzpatrick	INVENTOR'S SIGNATURE <i>Edward J. Fitzpatrick</i>	DATE 6/24/97
RESIDENCE (CITY AND STATE) Rancho Palos Verdes, California		INVENTION AGREEMENT DATE 03/25/80
FULL NAME OF SOLE OR JOINT INVENTOR James E. Justiss	INVENTOR'S SIGNATURE	DATE
RESIDENCE (CITY AND STATE) Rancho Palos Verdes, California		INVENTION AGREEMENT DATE 07/13/73
FULL NAME OF SOLE OR JOINT INVENTOR Remberto Martin	INVENTOR'S SIGNATURE	DATE
RESIDENCE (CITY AND STATE) Walnut, California		INVENTION AGREEMENT DATE 12/11/95
FULL NAME OF SOLE OR JOINT INVENTOR Michelle J. Glaser-Weiner	INVENTOR'S SIGNATURE <i>Michelle J. Glaser-Weiner</i>	DATE 6/24/97
RESIDENCE (CITY AND STATE) Manhattan Beach, California		INVENTION AGREEMENT DATE 6/80

STATE OF California)
COUNTY OF Los Angeles) SS:

On June 24, 1997 before me, Christina H. Tady
a Notary Public in and for said State, personally appeared Edward J. Fitzpatrick and Michelle J. Glaser-Weiner

☐ personally known to me or ☒ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.



Notary Public *Christina H. Tady*

COPY

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STATE OF _____)
COUNTY OF _____)

SS:

On _____ before me, _____,

a Notary Public in and for said State, personally appeared _____

☐ personally known to me or ☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Notary Public _____

STATE OF _____)
COUNTY OF _____)

SS:

On _____ before me, _____,

a Notary Public in and for said State, personally appeared _____

☐ personally known to me or ☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Notary Public _____

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